

General

Title

Occupational health: proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work.

Source(s)

Council of State and Territorial Epidemiologists (CSTE), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists (CSTE); 2016 Mar. 145 p.

Measure Domain

Primary Measure Domain

Related Population Health Measures: Population Health State

Secondary Measure Domain

Related Population Health Measure: Environment

Brief Abstract

Description

This measure is used to assess the estimated percent of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work.

Rationale

State health agencies, which are vested with the legal authority to require disease reporting and collect health data, play a central role in public health surveillance. Whereas public health surveillance was once focused primarily on infectious diseases, it has expanded in recent years to include surveillance of a wide range of health outcomes and their determinants, including chronic diseases, injuries and health behaviors (Halperin & Horan, 1998). National statistics on occupational injuries and illnesses have been collected largely outside of the public health infrastructure and rely almost entirely on data reported by employers. State health agencies that have access to a wide variety of public health data systems have

an important role in the surveillance of occupational diseases, injuries and hazards.

Work-related asthma is preventable but often goes undiagnosed by physicians. Research has shown that work-related asthma can have adverse effects on the worker, including increased morbidity, adverse socioeconomic impacts and difficulty getting and sustaining work. Estimating the burden of asthma caused or made worse by work can help target prevention programs and activities.

Evidence for Rationale

Council of State and Territorial Epidemiologists (CSTE), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists (CSTE); 2016 Mar. 145 p.

Halperin W, Horan JM. Surveillance of injuries. Public Health Rep. 1998 Sep-Oct;113(5):424-6. [PubMed](#)

Primary Health Components

Occupational illnesses; asthma

Denominator Description

Ever-employed adults 18 years or older with current asthma

Numerator Description

Ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Asthma is a chronic inflammatory disease of the airways that affects more than 18 million adults in the United States (Centers for Disease Control and Prevention [CDC] & National Center for Health Statistics [NCHS], 2010). Work-related asthma is a term used to describe asthma that has a temporal association between asthma symptoms and the work environment (Vandenplas & Malo, 2003; Tarlo et al., 2008). It has been estimated that approximately 36% to 58% of adult asthma is caused or made worse by workplace exposures, which translates to approximately 9.7 million adults in the United States (Knoeller, Mazurek, & Moorman, 2011). However, work-related asthma continues to be underdiagnosed (Tarlo et al., 2008; Henneberger et al., 2008; Balmes et al., 2003). If diagnosed early, work-related asthma may be partially or completely reversible if exposures can be identified and properly stopped or controlled (Tarlo

et al., 2008).

The Asthma Call-Back Survey (ACBS) contains multiple questions related to the work-relatedness of a respondent's asthma and these questions are administered to adults 18 years or older. Four of the questions ask about asthma caused or made worse by the respondent's current or previous jobs. Two other questions ask about whether the respondent was told by or ever told their health care provider that their asthma was work related. The latter two questions require that the respondent both encountered a healthcare professional and that a discussion took place about work-relatedness of their asthma. This occurs in approximately 22% to 25% of respondents who report their asthma is caused or aggravated by work (Lutzker et al., 2010). The two questions on whether the respondent was told by or ever told their healthcare provider that their asthma was work related may also underestimate the true burden of work-related asthma because work-related asthma is often under-diagnosed. Physicians document asking about work-related asthma in only 15% of medical charts of asthma patients, suggesting under-diagnosis of work-related asthma (Milton et al., 1998). Additionally, the American Thoracic Society estimates that as much as 58% of asthma is attributable to work (Balmes et al., 2003), a measure much closer to that which can be obtained by using the four questions on asthma caused or made worse by work.

Evidence for Additional Information Supporting Need for the Measure

Balmes J, Becklake M, Blanc P, Henneberger P, Kreiss K, Mapp C, Milton D, Schwartz D, Toren K, Viegi G, Environmental and Occupational Health Assembly, American Thoracic Society. American Thoracic Society Statement: Occupational contribution to the burden of airway disease. *Am J Respir Crit Care Med*. 2003 Mar 1;167(5):787-97. [PubMed](#)

Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS). Current asthma prevalence. In: National Health Interview Survey (NHIS), 2010. Atlanta (GA): Centers for Disease Control and Prevention; 2010.

Council of State and Territorial Epidemiologists (CSTE), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists (CSTE); 2016 Mar. 145 p.

Henneberger PK, Redlich CA, Callahan DB, Harber P, Lemi  re C, Martin J, Tarlo SM, Vandenplas O, Tor  n K, ATS Ad Hoc Committee on Work-Exacerbated Asthma. An official American Thoracic Society statement: work-exacerbated asthma. *Am J Respir Crit Care Med*. 2011 Aug 1;184(3):368-78. [PubMed](#)

Knoeller GE, Mazurek JM, Moorman JE. Work-related asthma among adults with current asthma in 33 states and DC: evidence from the Asthma Call-Back Survey, 2006-2007. *Public Health Rep*. 2011 Jul-Aug;126(4):603-11. [PubMed](#)

Lutzker LA, Rafferty AP, Brunner WM, Walters JK, Wasilevich EA, Green MK, Rosenman KD. Prevalence of work-related asthma in Michigan, Minnesota, and Oregon. *J Asthma*. 2010 Mar;47(2):156-61. [PubMed](#)

Milton DK, Solomon GM, Rosiello RA, Herrick RF. Risk and incidence of asthma attributable to occupational exposure among HMO members. *Am J Ind Med*. 1998 Jan;33(1):1-10. [PubMed](#)

Tarlo SM, Balmes J, Balkissoon R, Beach J, Beckett W, Bernstein D, Blanc PD, Brooks SM, Cowl CT, Daroowalla F, Harber P, Lemi  re C, Liss GM, Pacheco KA, Redlich CA, Rowe B, Heitzer J. Diagnosis and management of work-related asthma: American College Of Chest Physicians Consensus Statement. *Chest*. 2008 Sep;134(3 Suppl):1S-41S. [PubMed](#)

Vandenplas O, Malo JL. Definitions and types of work-related asthma: a nosological approach. *Eur Respir J*. 2003 Apr;21(4):706-12. [PubMed](#)

Extent of Measure Testing

In 1998, the Council of State and Territorial Epidemiologists (CSTE), in association with the National Institute for Occupational Safety and Health (NIOSH), convened the NIOSH-States Occupational Health Surveillance Work Group to make recommendations to NIOSH concerning State-based surveillance activities for the coming decade.

The Work Group recognized the need to pilot test 19 indicators to assess the feasibility of widespread implementation and to develop specific guidance on how to compute the proposed measures. In summer 2002, the five "Core" states with NIOSH Cooperative Agreements to conduct "Core Occupational Health Surveillance" (California, Massachusetts, Michigan, New York, and Washington) agreed to pilot test the indicators and to create user-friendly "how-to" guides so that other states could calculate the indicators.

Subsequent to the initial pilot testing by the five "Core" states, eight additional states (Connecticut, Maine, Nebraska, New Jersey, New Mexico, North Carolina, Oregon and Wisconsin) pilot tested the "how-to" guides. Feedback from these additional states was incorporated into the development of the final "how-to" guides for 19 indicators in November 2004.

Procedures to review, approve, and implement new indicators were developed by the Work Group. In 2013, a fourteenth health effect indicator (*Asthma among Adults Caused or Made Worse by Work*) was developed and pilot tested. The Work Group voted to adopt this as the twenty-first indicator. In 2014, a fifteenth health effect indicator (*Work-Related Severe Traumatic Injury Hospitalizations*) was developed and pilot tested. The Work Group voted to adopt this as the twenty-second indicator.

Evidence for Extent of Measure Testing

Council of State and Territorial Epidemiologists (CSTE), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists (CSTE); 2016 Mar. 145 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

National Public Health Programs

State/Provincial Public Health Programs

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

State/Provincial

Statement of Acceptable Minimum Sample Size

Does not apply to this measure

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Framework for Public Health Quality

Public Health Aims for Quality

Population-centered

Risk Reducing

Transparency

Vigilant

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding Period

The calendar year

Denominator Sampling Frame

Geographically defined

Denominator (Index) Event or Characteristic

Geographic Location

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Ever-employed adults 18 years or older with current asthma

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work

Note: Refer to the "How-To Guide – Indicator #21" section of the original measure documentation for instructions to calculate the estimated proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work.

Exclusions

Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Patient/Individual survey

State/Province public health data

Type of Health State

Adverse Health State

Instruments Used and/or Associated with the Measure

Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System Asthma Call Back Survey

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Does not apply to this measure (i.e., there is no pre-defined preference for the measure score)

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

Other Available Data: There are other data available in the Behavioral Risk Factor Surveillance System (BRFSS) and Asthma Call-back Survey (ACBS) that can be used for analysis, including:

BRFSS: Age, gender, race/ethnicity, education level, household income, industry and occupation (some states)

ACBS: Age of asthma diagnosis, cost-barriers, health insurance, health care use, asthma symptoms, asthma control

Recommendations: State programs may want to cross-tabulate by variables mentioned above. If you are interested in analyzing data by different subgroups do not subset your data to create these subgroups and analyze separately. Creating a new dataset will result in incorrect confidence intervals, standard errors, and tests of significance. If you are interested in testing for significance, presenting confidence intervals, or presenting standard errors, you must use the whole dataset and then perform a domain analysis.

Standard of Comparison

not defined yet

Identifying Information

Original Title

21.2 Proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work.

Measure Collection Name

Occupational Health Indicators

Measure Set Name

Occupational Illnesses

Submitter

Council of State and Territorial Epidemiologists - Professional Association

Developer

Centers for Disease Control and Prevention - Federal Government Agency [U.S.]

Council of State and Territorial Epidemiologists - Professional Association

Funding Source(s)

Centers for Disease Control and Prevention (CDC)–National Institute for Occupational Safety and Health (NIOSH) Award 2-R01 OH010094-05: Enhancing State-Based Occupational Health Surveillance Capacity

Composition of the Group that Developed the Measure

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Christy Curwick, Washington State Department of Labor and Industries

Current Occupational Health Indicator (OHI) and Work Group Leads

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Tristan Victoroff, *Co-chair* (NIOSH Representative)
Patricia Schleiff, *Co-chair* (NIOSH Representative)
Amy Patel, *Secretary* (CSTE)
Karen Cummings, *OHI Lead* (State Representative from New York)

Financial Disclosures/Other Potential Conflicts of Interest

None

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2016 Mar

Measure Maintenance

Annually

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: Council of State and Territorial Epidemiologists (CSTE),

National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists; 2014 Mar. 116 p.

Measure Availability

Source available from the [Council of State and Territorial Epidemiologists \(CSTE\) Web site](#) .

For more information, contact CSTE at 2872 Woodcock Boulevard, Suite 250, Atlanta, GA 30341; Phone: 770-458-3811; Fax: 770-458-8516; Web site: <https://cste.site-ym.com/> .

NQMC Status

This NQMC summary was completed by ECRI Institute on December 23, 2014. This NQMC summary was verified by the measure developer on February 5, 2015.

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No copyright restrictions apply.

Production

Source(s)

Council of State and Territorial Epidemiologists (CSTE), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC). Occupational health indicators: a guide for tracking occupational health conditions and their determinants. Atlanta (GA): Council of State and Territorial Epidemiologists (CSTE); 2016 Mar. 145 p.

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